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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,025	09/05/2003	Mark P. Goldenfield	ARF 2002-014	9046

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EXAMINER

BEHREND, HARVEY E

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,025

Applicant(s)

GOLDENFIELD ET AL.

Examiner

Harvey E. Behrend

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/24/04
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 9-14 is/are pending in the application.
- 4a) Of the above claim(s) 1, 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3, 5, 7, 8, 10, 13, 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/24/04 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the features of claims 1 (as to the relative size of the contact areas of the dimples and/or springs of the auxiliary support cells versus the main support cells), claims 9 and 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicants arguments are unpersuasive.

It is immaterial as to whether Fig. 6 shows the outer strap of the auxiliary grid as having vertical springs because the claimed relative difference in contact area of the

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dimples and/or springs, is with the inner straps of the two different grids (e.g. see the specification on page 11 lines 29+).

The examiner does not dispute that patent drawings do not have to be drawn to scale, however, the drawings are required by the Rules to show every feature recited in the claims (this clearly includes the claimed relative difference in size of the contact area of the dimples and/or springs of the inner straps of the two different grids).

None of the drawing figures illustrate the actual contact areas of any of the springs and/or dimples.

Despite applicants arguments to the contrary, it is not seen wherein Fig. 6 shows both vertical springs and dimples on the inner straps nor does it show a common plane intersecting both the vertical springs and the dimples.

Amended Fig. 6 does not clearly show a guide tube attached at the cell corners by butt-welds (it is not known what the slightly darkened portions at the two illustrated diagonal corners of the cell (through which the guide tube passes) is supposed to represent).

Additionally, it has not been shown that the term "mechanically or metallurgically affixed" inherently means a "butt-weld" and, that in this art, such "butt-welds" inherently span the space between the square cell corner and the outer circumferential surface of the guide tube.

The proposed drawing correction to Fig. 6 has accordingly not been approved, as it is considered as drawn to new matter for the above reasons.

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2. The amendment filed 9/24/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The amendment to the paragraph beginning on page 9 line 24.

Applicant is required to cancel the new matter in the reply to this Office Action.

Fig. 6 shows a 15x15 array, not a "17x17" array.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5, 9, 10, 13, 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Leclercq (U.S. 4844861).

The claimed main support grids read on grids 18 and 21. The claimed auxiliary grids read on grids 20 which are positioned along a mid span of the fuel elements within the mid third region. Grids 20 are shown in Figs. 5-8, grid 21 is shown in Fig. 9 and grid 18 is shown in Fig. 3.

As shown in the drawings and described for example in col. 5 lines 9-12, grids 20 have dimples and/or springs (bosses) on each face at two levels in contrast to grids 18 and 21 which only have the contacting dimples on one level (thus the set of dimples and/or springs on the auxiliary grids 20 have a larger contact area with the fuel elements (in fact, it is double since the set is on two levels instead of just one level) than the set of dimples and/or springs on the main support grids 18, 21).

As to claim 2, note that there will inherently be a grid 20 that is supported substantially midway between two of the main support grids 18, 21 (note that claim 2 does not require the grids immediately above and below the auxiliary grid, to be main support grids and thus the auxiliary grid 20 can have another grid 20 be positioned immediately above or below it).

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Claim 3 reads for example on Fig. 1 which shows a plurality of grids 20 positioned below a lowermost grid 21 and above an uppermost grid 18, but no auxiliary grids 20 positioned between the grids 18 or between the grids 21.

As to claim 10, the sentence bridging cols. 4 and 5 states that the grids 20 may be provided with mixing vanes 40 (thus not all of the grids 20 are required to have mixing vanes and, applicants claim language does not define over such).

Col. 5 lines 16-24 states that the (main) support grids 21 also have mixing vanes 40.

Grids 18 do not have mixing vanes (col. 5 lines 38-40).

The (auxiliary) grids 20 are mechanically or metallurgically affixed to at least some of the guide tubes (e.g. see Figs. 7, 8, col. 4 lines 41+, col. 5 lines 13+).

As to claim 14, note Figs. 5, 7, col. 5 lines 4+.

6. Claims 1, 5, 7, 9, 13, 14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Thomazet et al (U.S. 4804516).

The upper grids 10-16 of Fig. 2 (applicants claimed auxiliary grids) can have the construction shown in Figs. 5, 6 and the lower grids 6-9 of Fig. 2 (applicants claimed main support grids) can have the construction shown in Figs. 7, 8, 9.

The grids in Figs. 5, 6 have double the bosses (and hence, double the contact area) of the bosses on the grids in Figs. 7, 8, 9.

As to claim 7, Fig. 2 of the reference clearly shows the upper grids 10-16 as having a shorter axial length than the walls of the lower grids 6-9.

Figs 5 and 6 show the upper grids as being attached to the guide tubes and they show guiding tabs.

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7. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over either Leclercq or Thomazet et al in view of Schreiber et al (U.S. 4155807).

The primary references have been discussed above. While the primary references as discussed above, are considered as showing the use of guide tabs on the outer grid strap which would prevent hang-up with adjacent fuel assemblies during insertion or removal from the core, such features are conventionally and advantageously utilized in this art for the stated purpose and are more clearly shown for example, in Fig. 3 of Schreiber et al. Thus and in any event, such use of guide tabs on the auxiliary grids of either primary reference would accordingly have been prima facie obvious.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harvey Behrend whose telephone number is (703) 305-1831. The examiner can normally be reached on Tuesday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-4195.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-1113.

Behrend/vs
December 14, 2004



HARVEY E. BEHREND
PRIMARY EXAMINER